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## Proposed Monitoring Well Site at Barneys

1 message

**Vinton, Brian (RTKC)** <Brian.Vinton@riotinto.com>

Wed, Feb 11, 2015 at 5:33 PM

To: "paulbaker@utah.gov" &lt;paulbaker@utah.gov&gt;, "bhamos@utah.gov" &lt;bhamos@utah.gov&gt;, "lheppler@utah.gov" &lt;lheppler@utah.gov&gt;

Cc: "Heaton, Trevor (RTKC)" &lt;Trevor.Heaton@riotinto.com&gt;, "Wheeler, Scott (RTKC)" &lt;Scott.Wheeler@riotinto.com&gt;, "Nicholson, Becky (RTKC)" &lt;Becky.Nicholson@riotinto.com&gt;

Dear Paul, Brian and Leslie,

Attached is a proposal to drill and install a monitoring well at Barneys Canyon on Kennecott property. This proposal is part of the response to the Division Directive from DOGM from April 2014 under Item 9. The request from DOGM to propose a monitoring site was made after discussions between DOGM and DWQ. Please take a look at the proposal and let me know if there are questions or comments. Once concurrence is reached with agencies and Kennecott, will we receive a letter of approval and will this letter be from both DOGM and DWQ?

I can be reached at [801.569.7887](tel:801.569.7887)

Thanks

Brian

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**Barneys Proposed Monitoring Well letter to DOGM and UDW.pdf**

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Steve Schnoor  
Manager - Environment

RECEIVED E-Mail

FEB 11 2015

Div. of Oil, Gas & Mining

11 February 2015

Mr. Paul Baker, Minerals Program Manager  
Division of Oil, Gas & Mining  
Utah Department of Natural Resources  
P.O. Box 145801  
Salt Lake City, Utah 84114-5801

**Subject: Response to Item #9 from April 9, 2014 DOGM Letter Regarding Placement of New Monitoring Well at Barneys Canyon**

Dear Mr. Baker:

Kennecott Barneys Canyon Mining Company (Barneys) submits the following information and proposal to Utah Division of Oil, Gas and Mining (DOGM) in response to Item #9 of the "Division Directive" dated April 9, 2014. Specifically in the directive, Barneys was requested to "Propose a ground water monitoring well location in Segment 3. Include the specifics of the well construction details and monitoring protocol". Rio Tinto Kennecott (RTKC), on behalf of Barneys, in a November 6, 2014 letter to DOGM addressed Item 9 by stating an amendment to the NOI would be provided and this letter will serve as the amendment.

The hydrogeology data for the Barneys area and more specifically, the area including the leach pads and adjacent drainages has been reviewed along with the easterly draining drainage adjacent and north of Pad #5. The drainage adjacent and north of Pad #5 is called Clay Hollow and this drainage received runoff sediment that flowed approximately one mile easterly. Cleanup of the sediment was completed in 2014.

Barneys groundwater is monitored under a Ground Water Discharge Permit (#UGW3500001) and the permit includes 10 monitoring and two production wells. For the Clay Hollow Drainage, there are no existing monitoring wells however, there is one culinary well (Well #6), which is not part of the permit and owned by the Kearns Special Service District located on the north margin of Clay Hollow. This well is positioned approximately 5500 feet easterly from the northeast corner of Pad #5 and 5000 feet downstream of the B&G railroad grade (Figure 1).

The proposed monitoring well would be located approximately 600 feet east of the B&G railroad grade in Clay Hollow. Barney's nearest monitoring well is BCG282 located on the east side of Pad #5. Based upon the hydrogeology for the site and BCG282 data, the geology



for the proposed site will consist of sandy silt and some gravel. The depth to groundwater is expected at 115 to 130 feet below ground surface. At the Kearns Well #6, the depth to water was 191 feet in 2012 and the Driller's Log from 1989 shows the entire boring (1320 feet total) as interlayered tuffaceous soil (Jordan Narrows Unit). The proposed site was selected at a location that would seem best suited, based on the hydrogeology, to detect potential groundwater changes downgradient of Barneys, specifically Pad #5 and because no current monitoring is conducted at this northeast corner of Barneys site.

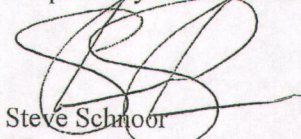
Barneys is proposing to drill and install the monitoring well in the second quarter of 2015. The drill method includes using roto-sonic and using a six by four inch pipe system. Minimal, if any drill fluids, would be used. Well completion activities would include installing a 2.5 inch Schedule 80 flush threaded PVC pipe with 20 foot screen placed at approximately 120 to 140 feet below ground surface. The screen slot size would include 0.02 inch factory cut openings. Completion materials, including the installation of the pipe and screen will occur within the drill casing. As the drill casing is extracted completion materials including 10-20 Colorado Silica Sand will be placed in the annular space from the screen bottom to a point approximately 10 feet above the top of the screen. Transition sand (~16-40 mesh) will be placed above the 10-20 sand and bentonite products will be placed from the top of the sand pack to surface. A steel surface casing extending two to three feet below ground surface and 2 to 3 feet above surface, will be cemented in place after the drill casing and completion products have been installed. The drilling and installation methods will be in compliance with Utah Department of Natural Resources regulations for installation of monitoring wells.

The new monitoring well will be monitored quarterly for the first year with the same analytes as the existing Barneys monitoring wells. Well development and sampling protocol would be consistent with RTKC's Groundwater Characterization and Monitoring Plan (plan approved through EPA and UDEQ). If additional water quality information is needed based upon the findings from this well, Kearns Special Service District has offered their Well #6 as a potential monitoring site. The Kearns well is operated seasonally during peak water usage time periods. RTKC has sampled Well #6 in the past and Kearns has provided its most recent water sampling results.

After concurrence is reached between Barneys, DOGM and DWQ on the drilling and well installation, RTKC, on behalf of Barneys will make plans to move forward with the proposed monitoring well. An as-built of the well will be provided to both DOGM and DWQ. Water quality results will be included with the reporting of other Barney permit wells to UDWQ and a copy of the new well analytical data will also be sent along to DOGM.

If you should have questions or comments on this proposal, please contact Brian Vinton at (801) 569-7887.

Respectfully submitted on Behalf of Barneys Canyon Mine



Steve Schmoor  
Manager, Environment  
Rio Tinto Kennecott

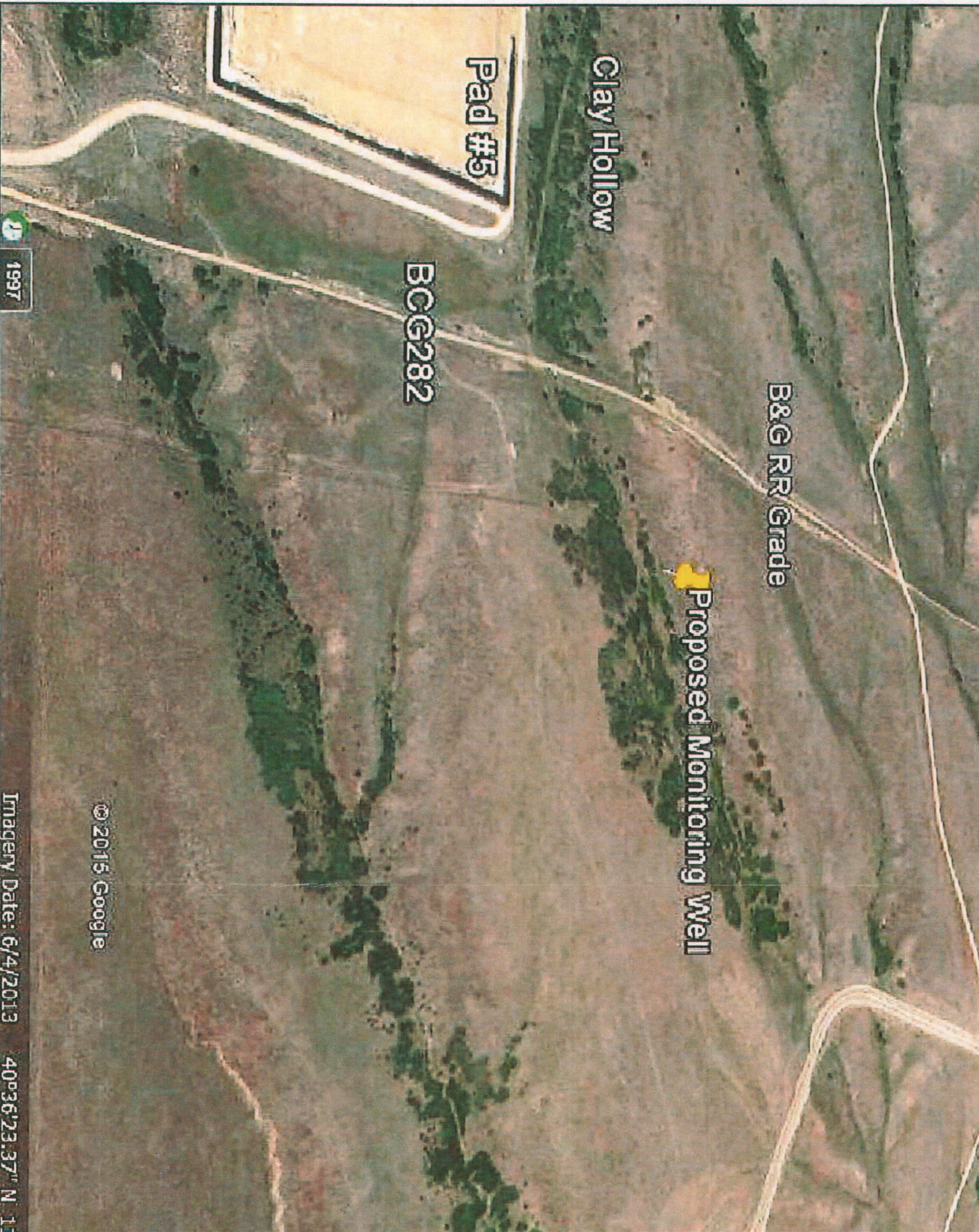
Cc: Brian Hamos (UDWQ)  
Leslie Hepler (DOGM)

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FEB 11 2015

Div. of Oil, Gas & Mining





### Legend



PROPOSED MONITORING WELL

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Imagery Date: 6/4/2013 40°36'23.37" N 111°10'10.12" W

Designed By: BV

Drawn by: EA

**KENNECOTT U**

ENVIRON